NASA
Glenn
Success
Stories

Biaxial Testing of High Strength Fabric

Raytheon Electronic Systems Sudbury, MA

TECHNOLOGY

Raytheon Electronic Systems produces inflatable radar domes which protect radar dishes from harsh elements. After receiving requests for radar domes in severe wind environments, the company asked NASA Glenn to perform a series of biaxial tests in the Structural Benchmark Test Facility. These tests have given insight into the strength properties of the fabric used in the domes.

In-plane biaxial testing in the Structural Benchmark Test Facility has evaluated fabric used in inflatable radar domes.

COMMERCIAL APPLICATION

- In-plane biaxial testing allows higher-fidelity design and analysis of structures fabricated from glass-Teflon material.
- The Structural Benchmark Test Facility provides low-cost material and structural evaluations for advanced engineering applications under extreme conditions

SOCIAL / ECONOMIC BENEFIT

- In-plane biaxial testing will lead to safer, more efficient and durable fabric designs.
- The insight gained into the structural problems in inflatable radar domes will prevent costly repairs in the future.

NASA APPLICATIONS

- NASA Glenn uses in-plane biaxial testing in the Structural Benchmark Test Facility to conduct structural fatigue research for aerospace applications.

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Company Contact:
Date of Technology: